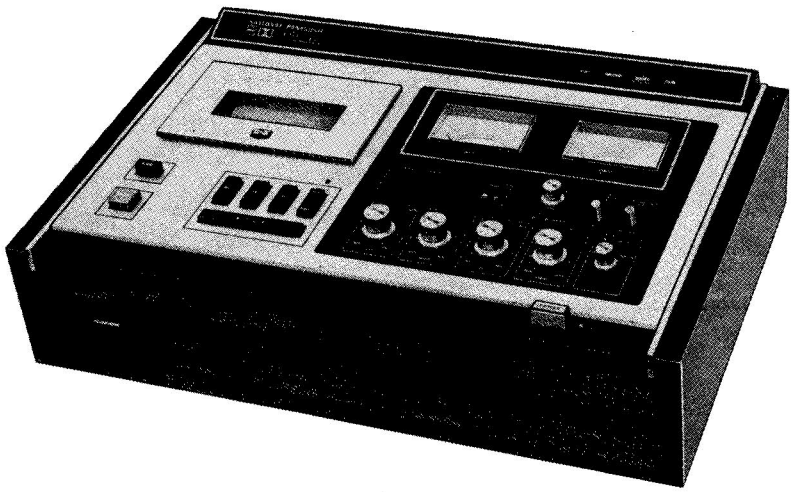
Service Manual

NATIONAL
TAPE RECORDER
PANASONIC

DOLBY SYSTEM HI-FI CASSETTE DECK WITH DIRECT DRIVE MOTOR AND HPF* HEAD



RS-275US MECHANISM SERIES

MODEL RS-276US MODEL RS-276USE

SPECIFICATIONS

Power Source:	AC: 90~109, 110~125, 200~219, 220~250 volts; 50/60 Hz
Power Consumption:	Approx. 30 W
Motors:	2-motor system 1-direct drive brushless motor for capstan drive 1-DC motor for FF/rewind drive
Transistors:	2SC1327(4) 2SC644(2) 2SC828(25) 2SC881(2) 2SD261(1) 2SC1317(3) 2SK371(2) 2SA564(2)
Recording System:	AC bias
Erase System:	AC erase
Track System:	4-track, 2-channel stereo
Tape Speed:	1-7/8 ips.
Frequency Response:	20~16,000 Hz (with standard tape) 20~18,000 Hz (with CrO_2 tape) 30~13,000 Hz (with standard tape) (DIN) 30~14,000 Hz (with CrO_2 tape) (DIN)
Signal to Noise Ratio:	50 dB (in standard operation) (DIN) 60 dB (in Dolby operation) (DIN)
Wow and Flutter:	Less than 0.10%
Inputs:	2-MIC −70 dB (0.3 mV)/600~20 KΩ 2-LINE −30 dB (30 mV)/220 KΩ
Output:	2-LINE −6 dB (500 mV)/load impedance 50 KΩ over 1-HEADPHONE 8Ω
Fast Forward and Rewind Time:	Approx. 100 seconds with C-60 cassette tape
Program Time:	1 hour stereo recording with C-60 cassette tape
Record/Playback Connection:	1-DIN connection
Dimensions:	17-1/4″(W) × 4-1/8″(H) × 12-3/4″(D)
Weight:	Approx. 19-7/8 lbs.

These specifications are subject to change in order to accommodate improvements in design.

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288 Central, Osaka, Japan

ORDER NO. ARD-7209203

LOCATION OF PARTS

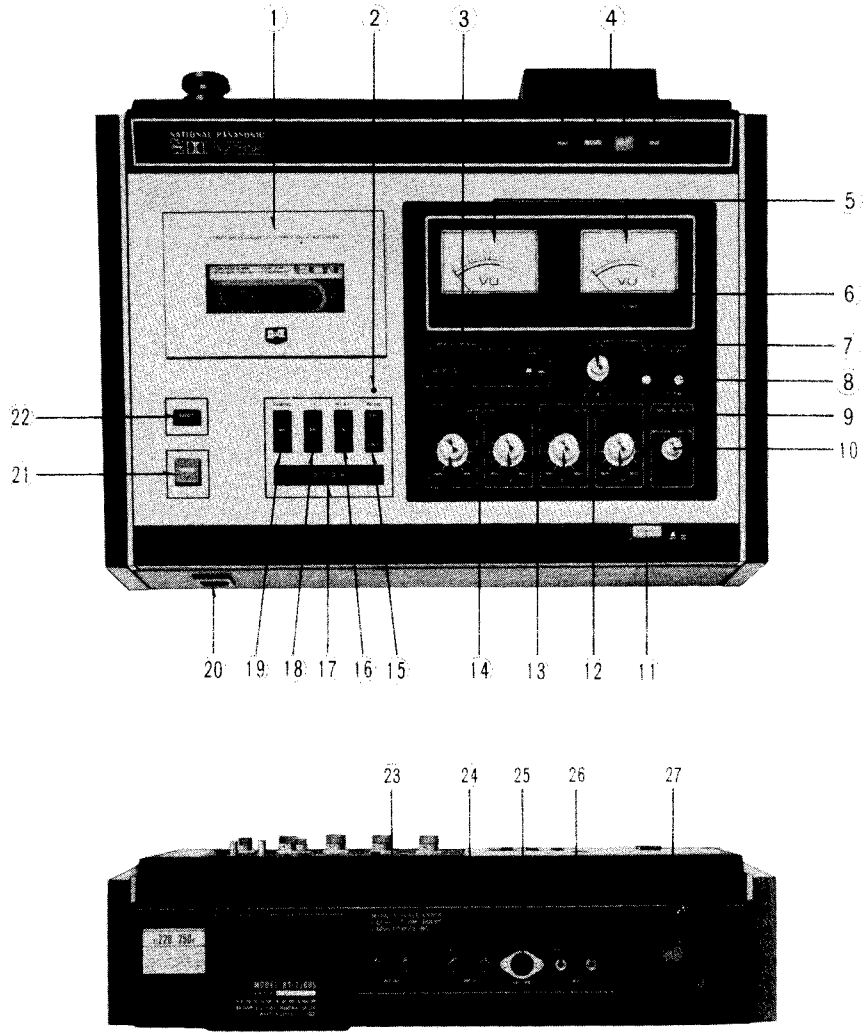


Fig. 1

① Cassette cover
② Pause pilot lamp
③ Tape counter and reset button
④ Meter zero-point adjustment screws
⑤ Level meters
⑥ Operation pilot lamps
⑦ Dolby level adjustment controls
⑧ Tape selector
⑨ Dolby switch
⑩ Input selector
⑪ Power switch
⑫ Playback level controls
⑬ Memory rewind switch
⑭ Recording level controls
⑮ Pause switch
⑯ Playback button
⑰ Stop button
⑱ Fast forward button
⑲ Rewind button
⑳ Headphones jack
㉑ Record button
㉒ Ejection button
㉓ Line output jacks
㉔ Line input jacks
㉕ Record/playback connection socket
㉖ Microphone jacks
㉗ Remove control connector

DISASSEMBLY INSTRUCTIONS

HOW TO REMOVE BODY CASE AND BACK CASE

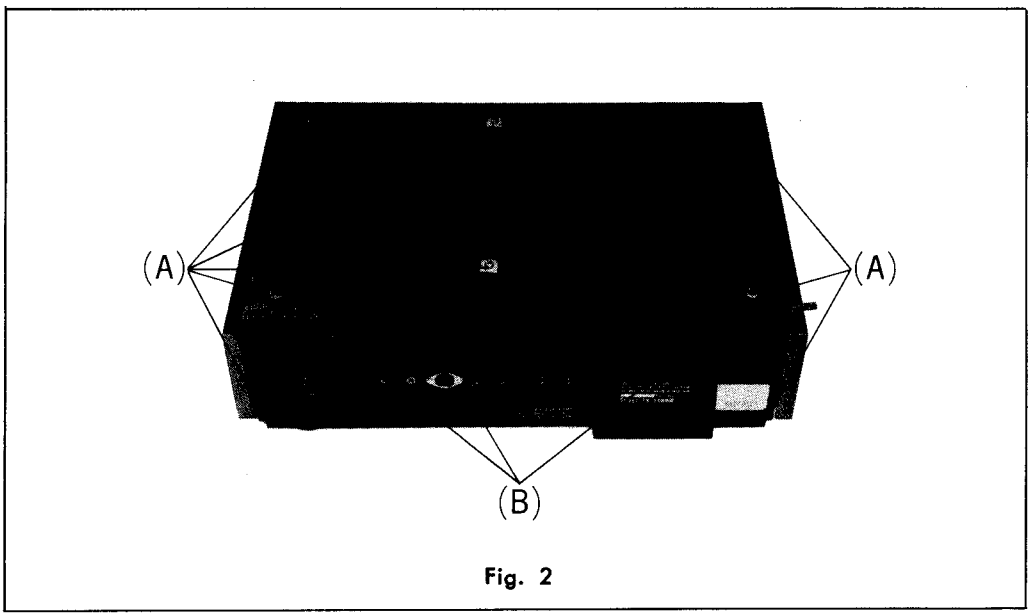


Fig. 2

1. Remove 8 body case holding screws (A).
2. Remove 3 back case holding screws (B).
3. Then body case and back case can be removed.

HOW TO REMOVE CHASSIS

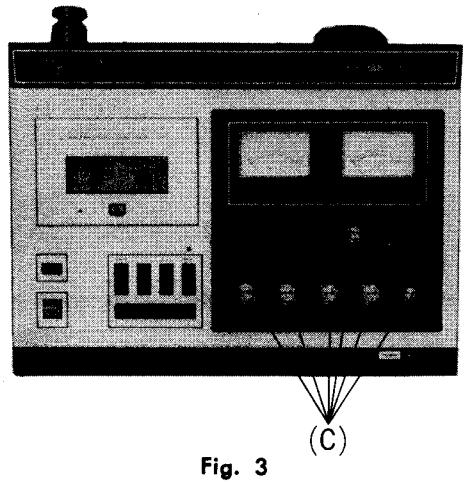


Fig. 3

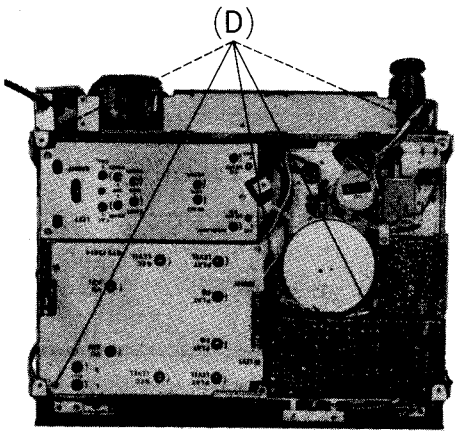


Fig. 4

1. Loosen control knob holding screws and remove 6 control knobs (C).
2. Remove 5 chassis holding screws (D).
3. Then chassis can be removed.

MECHANICAL ADJUSTMENTS

Instruments required:

Spring scale (having a range of 100 gr), tension gauge (having a range of 0~100 gr), measurement hub.

	ITEM	MODE	SPEC.	MEASUREMENT METHOD	ADJUSTMENT METHOD	REMARKS
1	Measurement of pressure of pressure roller.	Playback	400~500 gr	Shown in fig. 5.	Bend the (a) part of pressure roller spring in either of the directions shown by the arrow.	The value is indicated when the pressure roller moves away from capstan.
2	Measurement & adjustment of takeup tension.	Playback	55±15 gr	Shown in fig. 6.	Turn the friction spring in either of directions shown by the arrow in fig. 7. If too strong, counter-clockwise; if too weak, clockwise.	Clean away any oil or dust adhering to the rubber of the takeup reel table.

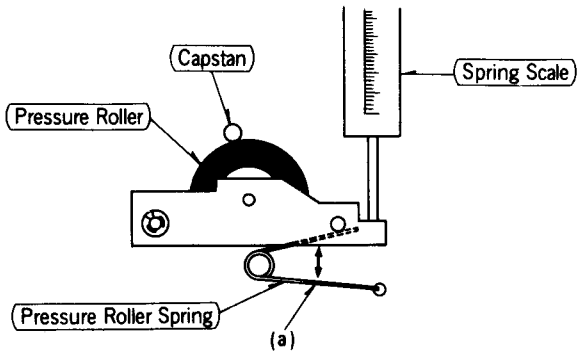


Fig. 5

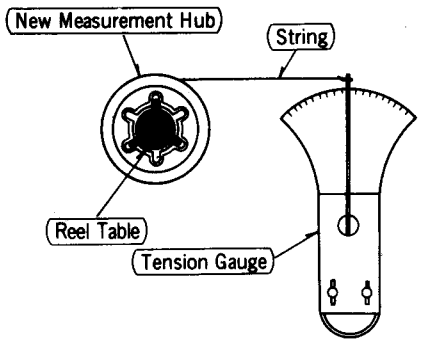


Fig. 6

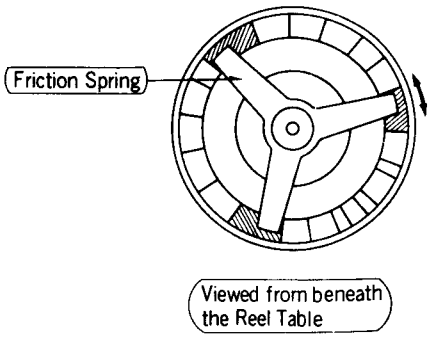


Fig. 7

AMPLIFIER ADJUSTMENTS

Measurements condition:

Power voltage.....AC 120 V; 50/60 Hz

	ITEM	SIGNAL SOURCE CONNECTION	OUTPUT CONNECTION	MODE	ADJUSTMENT	SPEC.	REMARKS
1	Measurement of recording bias oscillation frequency.	Oscilloscope with AF OSC to both ends of erase head. See fig. 8.	——	Record	——	85± 10 kHz	Adjust the AF OSC to obtain the circular and stationary Lissajous' pattern on the oscilloscope. The bias oscillation frequency is indicated by the scale of AF OSC.
2	Measurement & adjustment of recording bias current.	——	VTVM to both ends of R109 (for CH1), R110 (for CH2). See fig. 9.	Record	VC1 (for CH1) VC2 (for CH2)	1~2 mV	Bias current (0.1~0.2 mA) = Voltage value (1~2 mA) / Resistance value (10Ω)
3	Measurement of recording level.	1 kHz MIC −73±3 dB LINE IN −30±3 dB DIN −36±3 dB	VTVM to both ends of R109 (for CH1), R110 (for CH2). See fig. 10.	Record	VR5 (for CH1) VR6 (for CH2)	0.3 mV	To obtain 35μA of recording current through the recording head. Stop the bias oscillation by unsoldering the wire (A) as shown on printed circuit board (page 11). Recording level control VR should be maximum.
4	Adjustment of recording level indicator.	The same as above.	——	Record	VR7 (for CH1) VR8 (for CH2)	0 VU on VU meter.	At 0.5 V of line output.
5	Measurement of erase current.	——	VTVM with 1Ω resistor to erase head in series, after removing the ground side of erase head. See fig. 11.	Record	——	0.14 V	Erase current (0.14A) = Voltage value (0.14 V) / Resistance value (1Ω)
6	Adjustment of playback amplifier gain.	330 Hz −84±4 dB to playback head lead wire. See fig. 12.	VTVM to line output jack.	Playback	VR3 (for CH1) VR4 (for CH2)	1 V	Playback level control VR should be maximum.

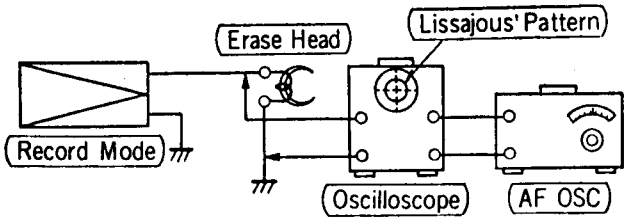


Fig. 8

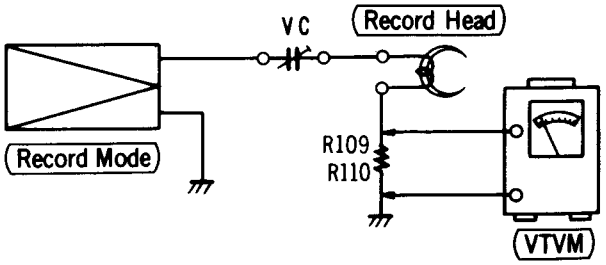


Fig. 9

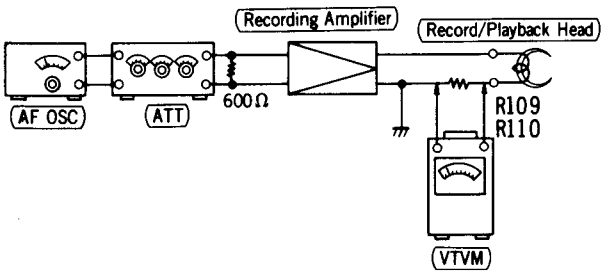


Fig. 10

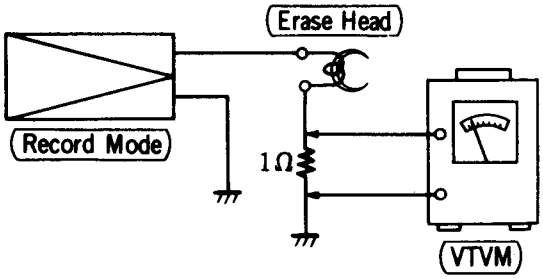


Fig. 11

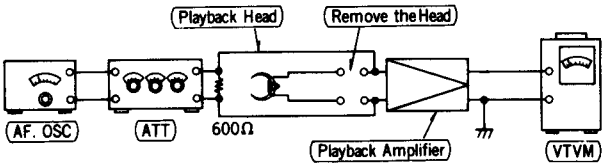


Fig. 12

DOLBY NR CIRCUIT ADJUSTMENT

Before adjustment of DOLBY* NR circuit, confirm that each value in item 3 and 4 on page 4 are within standard.

1. Place the set into the recording mode, set the DOLBY NR switch to OUT position and supply input to LINE IN jack to obtain +2 VU on VU meter. (frequency: 5 kHz)
   Read the value at both ends of R427 (terminal point 1-3 for CH1) and R428 (terminal point 1-10 for CH2) with the condition above.
2. Adjusting the ATT, make the reading of VTVM become 29 dB smaller than the value obtained through the adjustment in 1 above.
3. Confirm that the value at IN position is 8 dB greater than that at OUT position of DOLBY NR switch.
4. When it is not in condition above, adjust as bollows.
5. Set VR401 (for CH1) and VR402 (for CH2) to maximum.
6. Set the DOLBY NR switch to IN position.
7. Adjusting VR403 (for CH1) and VR404 (for CH2), make the reading of VTVM at both ends of R427 (terminal point 1-3 for CH1) and R428 (terminal point 1-10 for CH2) become 10 dB greater than the value obtained through the adjustment in 2 above.
8. Adjusting VR401 (for CH1) and VR402 (for CH2), make the reading of VTVM at both ends of R427 (terminal point 1-3 for CH1) and R428 (terminal point 1-10 for CH2) become 2 dB smaller than the value obtained through the adjustment in 5 above.

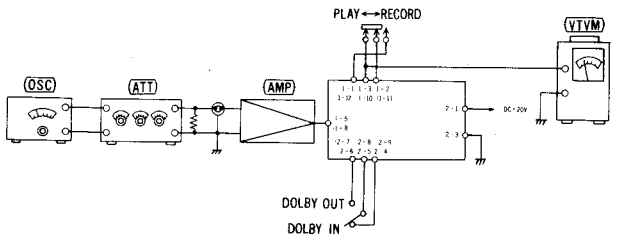


Fig. 13

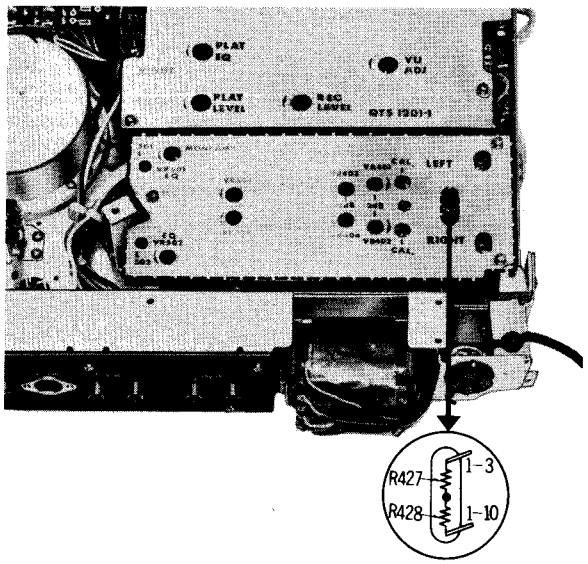
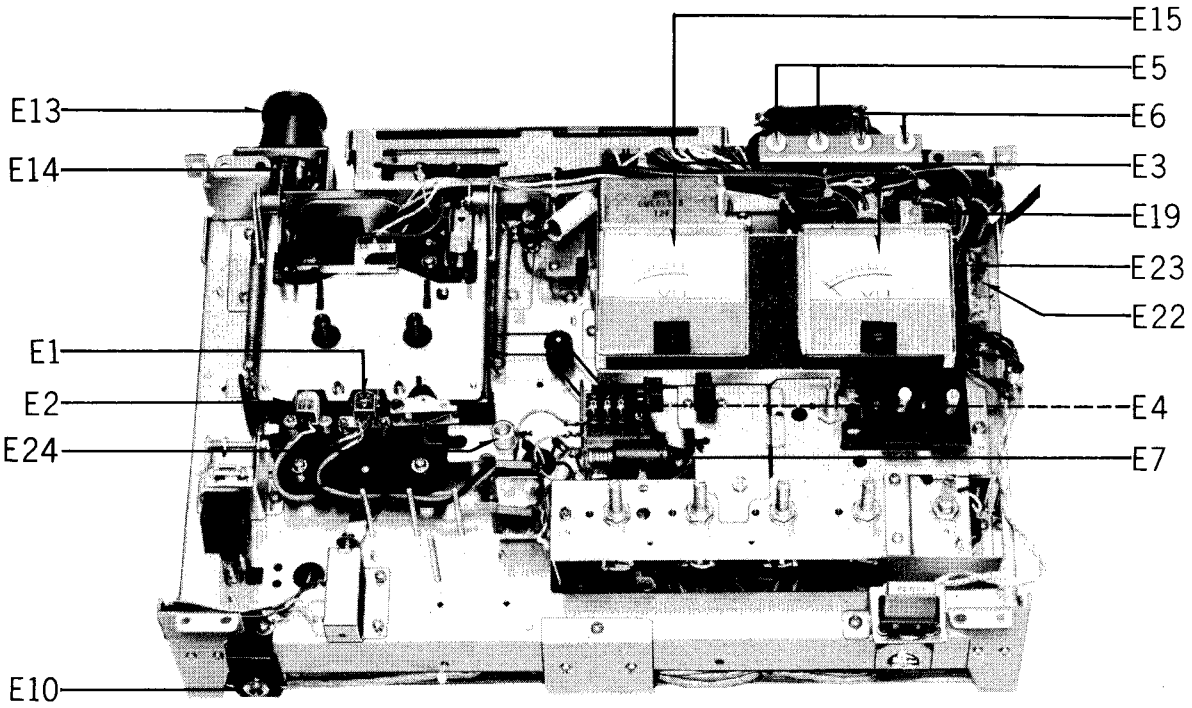
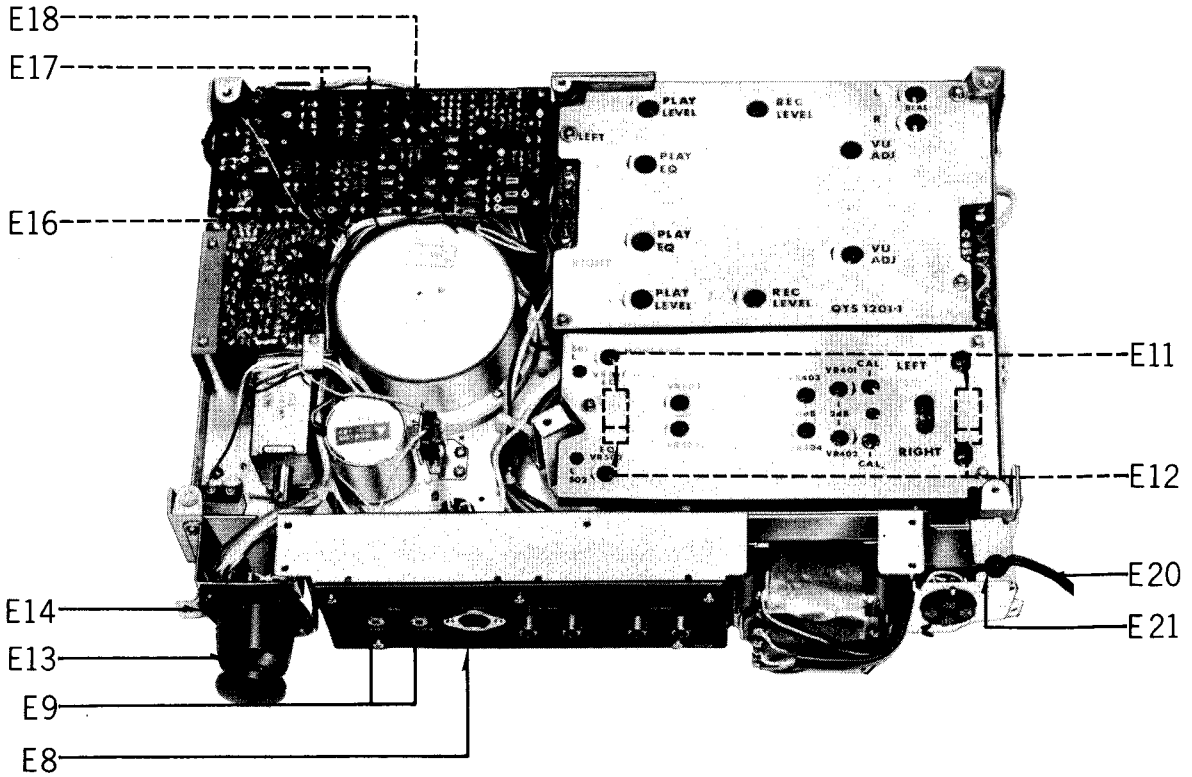


Fig. 14

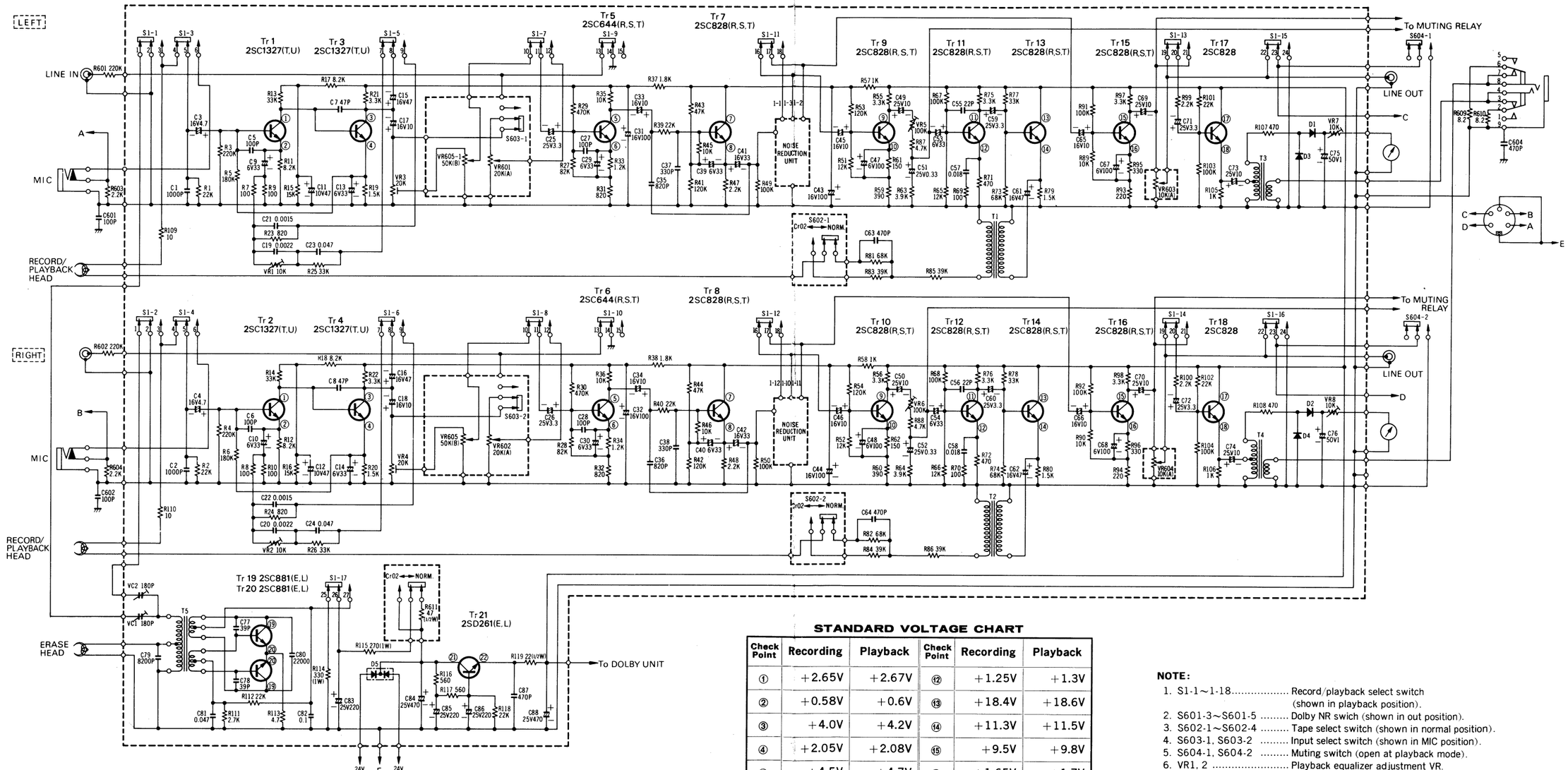
* Dolby is the trade mark of Dolby Laboratories Inc.

ELECTRICAL PARTS LOCATION





SCHEMATIC DIAGRAM MODEL RS-276US



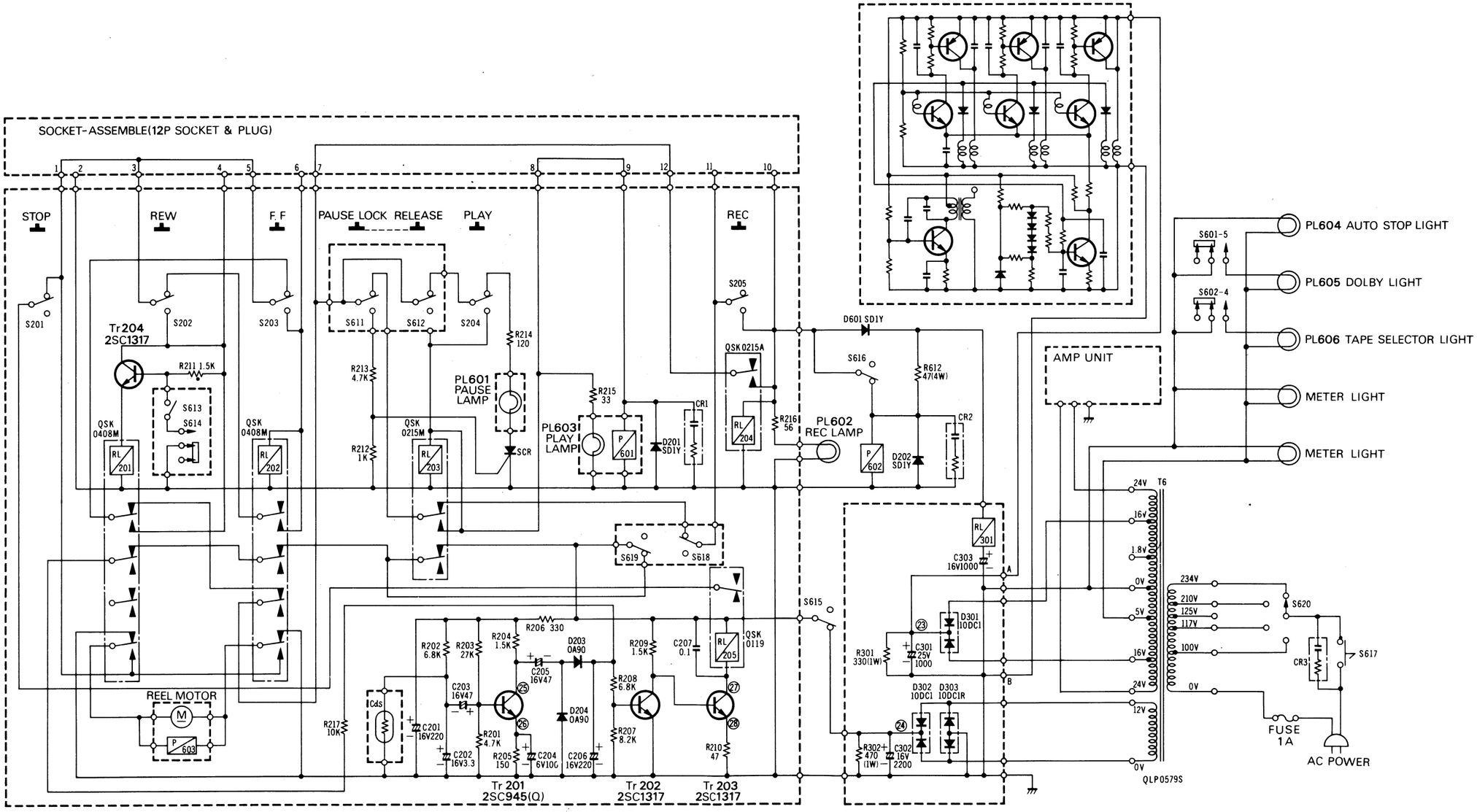
STANDARD VOLTAGE CHART

Check Point	Recording	Playback	Check Point	Recording	Playback
①	+2.65V	+2.67V	⑫	+1.25V	+1.3V
②	+0.58V	+0.6V	⑬	+18.4V	+18.6V
③	+4.0V	+4.2V	⑭	+11.3V	+11.5V
④	+2.05V	+2.08V	⑮	+9.5V	+9.8V
⑤	+4.5V	+4.7V	⑯	+1.65V	+1.7V
⑥	+0.85V	+0.88V	⑰	+18.4V	+18.6V
⑦	+12.5V	+12.8V	⑱	+14.0V	+14.2V
⑧	+7.8V	+7.9V	⑲	+10V	—
⑨	+10.6V	+10.8V	⑳	+0.2V	—
⑩	+1.15V	+1.2V	㉑	+25V	+25V
⑪	+9.5V	+9.8V	㉒	+20V	+20V

NOTE: All measurements are under no signal conditions with volume at minimum position.
Use VTVM for voltage measurements.

NOTE:

1. S1-1～1-18..... Record/playback select switch (shown in playback position).
2. S601-3～S601-5 ..... Dolby NR swich (shown in out position).
3. S602-1～S602-4 ..... Tape select switch (shown in normal position).
4. S603-1, S603-2 ..... Input select switch (shown in MIC position).
5. S604-1, S604-2 ..... Muting switch (open at playback mode).
6. VR1, 2 ..... Playback equalizer adjustment VR.
7. VR3, 4 ..... Playback level adjustment VR.
8. VR5, 6 ..... Recording current adjustment VR.
9. VR7, 8 ..... Level indicator adjustment VR.
10. VR601, 602 ..... Recording level control VR.
11. VR603, 604 ..... Output level control VR.
12. VR605-1, VR605-2 ..... Dolby NR level control VR.
13. VC1, VC2..... Recording bias current adjustment VR.
14. Resistors are ohms (Ω), 1/4 watt unless specified otherwise. K=1,000Ω.
15. Capacitor are microfarad (μF) unless specified otherurise. P=Pico-farads.
16. Encircled numbers (◯) show the checkpoints for voltage. The values are marked in the standard voltage chart.



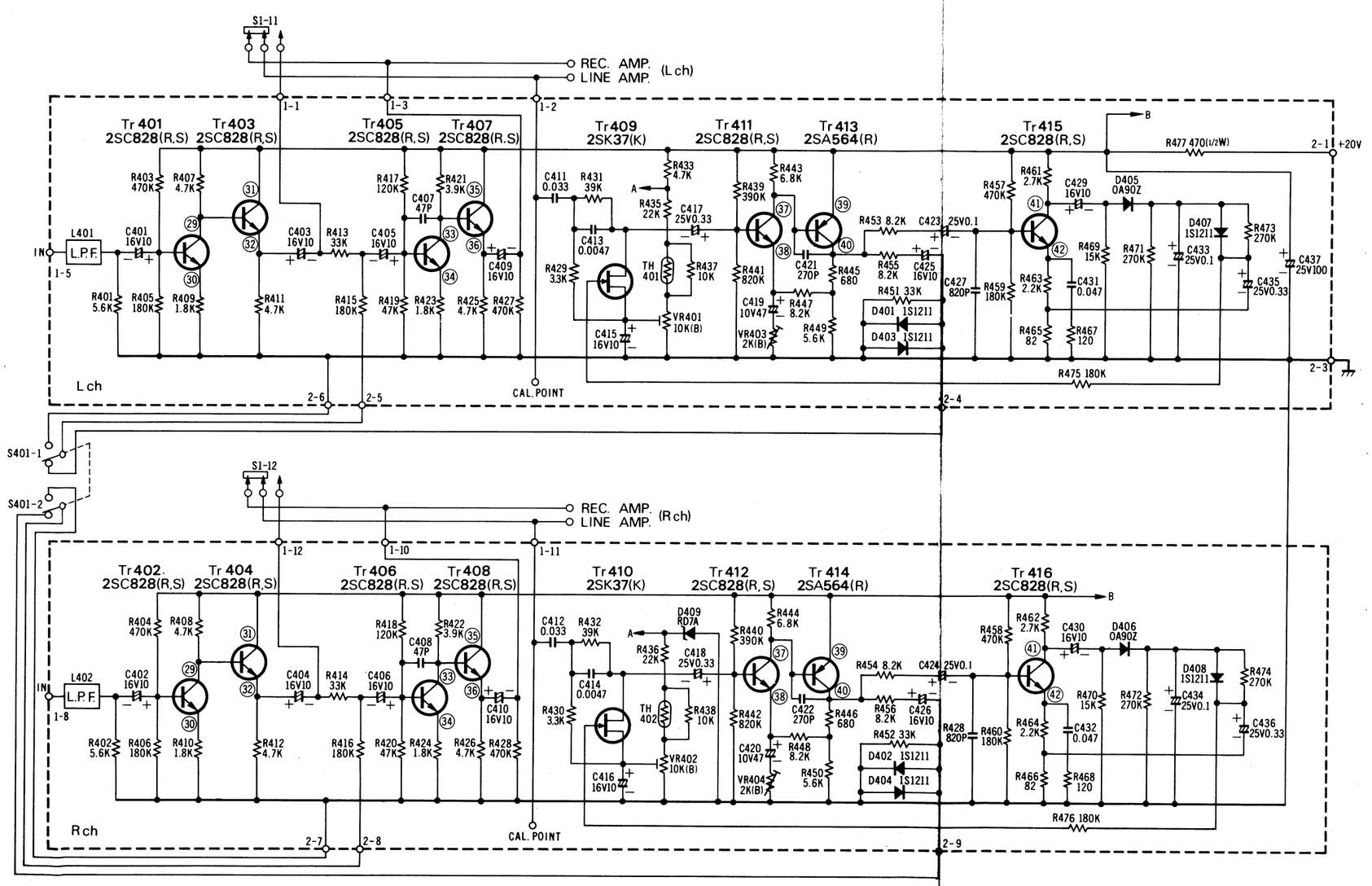
STANDARD VOLTAGE CHART

Check Point	Recording	Playback	Check Point	Recording	Playback
㉓	+16V	+16V	㉖	+0.6V	+0.7V
㉔	+12V	+12V	㉗	+11.7V	+11.8V
㉕	+4V	+4.1V	㉘	+0.015V	+0.02V

NOTE: All measurements are under no signal conditions with volume at minimum position.
Use VTVM for voltage measurements.

NOTE:

1. S201..... Stop button switch.
2. S202..... Rewind button switch.
3. S203..... Fast foward button switch.
4. S204..... Play button switch.
5. S205..... Record button switch.
6. S611..... Pause lock button switch.
7. S612..... Pause release button switch.
8. S613..... Memoly rewind push switch.
9. S614..... Memoly counter.
10. S615..... Power supply switch (close cassette in).
11. S616..... Current save switch (cooperating with P602).
12. S617..... Power switch.
13. S618..... Knock out tub senser (close when cassette with knock out tub in).
14. S619..... Pause senser (cooperating with P601).
15. S620..... Voltage select switch.
16. Resistors are ohms (Ω), 1/4 watt unless specified otherwise. K=1,000Ω.
17. Capacitors are microfarad (μF) unless specified otherwise. P=Pico-farads.
18. Encircled numbers (◌) show the checkpoints for voltage. The values are marked in the standard voltage chart.



STANDARD VOLTAGE CHART

Check Point	Recording	Playback	Check Point	Recording	Playback
㉙	+5.8V	+6V	㊱	+5.3V	+5.5V
㉚	+1.9V	+1.95V	㊲	+10.5V	+10.6V
㉛	+11.2V	+11.2V	㊳	+6.8V	+7.0V
㉜	+5.3V	+5.5V	㊴	+11.2V	+11.2V
㉝	+5.8V	+6V	㊵	+6.6V	+6.8V
㉞	+2.2V	+2.4V	㊶	+8.8V	+9V
㉟	+11.2V	+11.2V	㊷	+2V	+2V

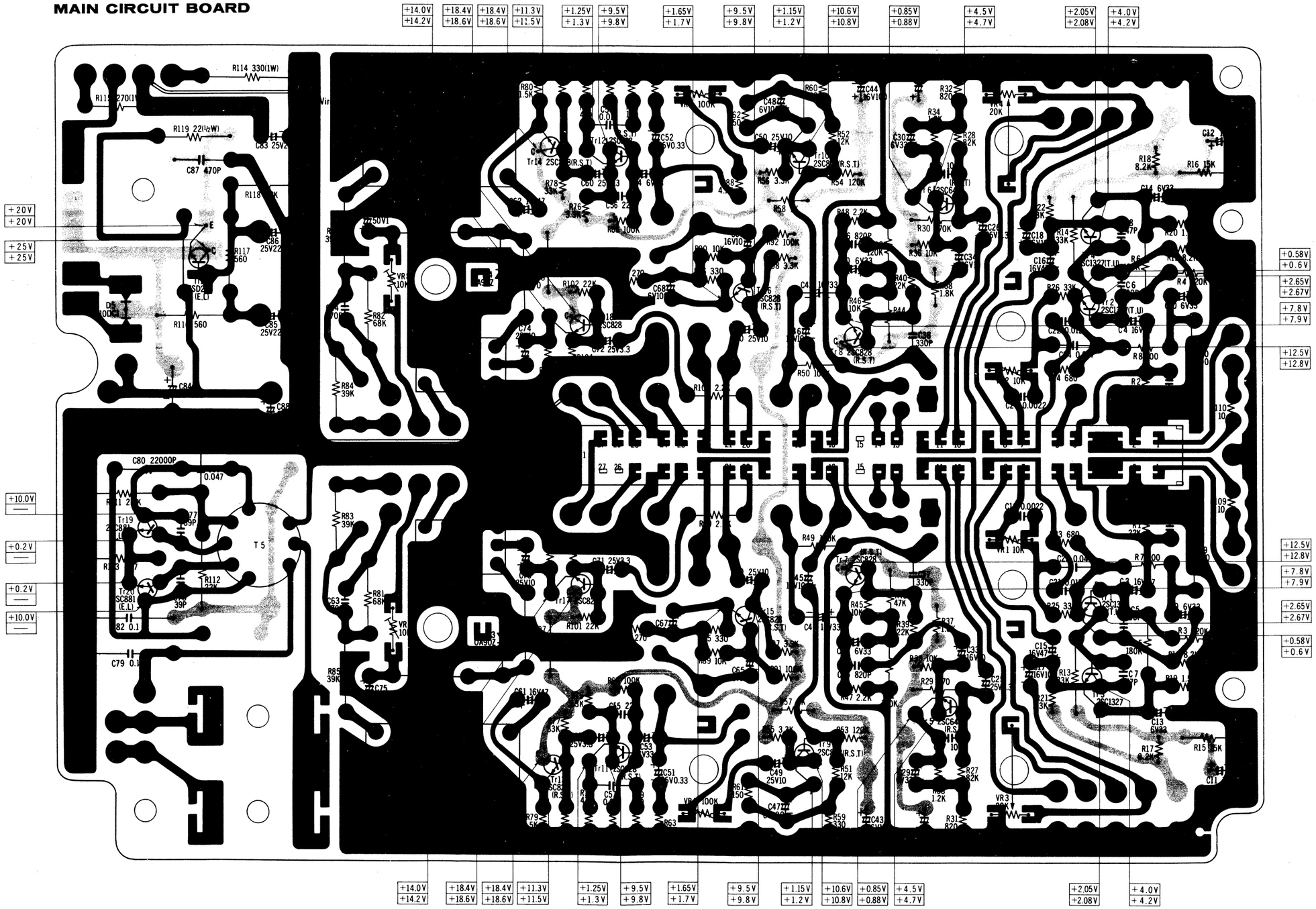
NOTE: All measurements are under no signal conditions with volume at minimum position.
Use VTVM for voltagn measurements.

NOTE:

1. S1-11, S1-12 ..... Record/playback select switch (shown in playback position).
2. VR401～VR404 ..... Dolby NR adjustment VR.
3. Resistors are ohms (Ω). 1/4 watt unless specified otherwise. K=1,000Ω.
4. Capacitors are microfarad (μF) unless specified otherwise. P=Pico-farads.
5. Encircled mumbers (○) show the checkpoints for voltage. The values are marked in the standard voltage chart.

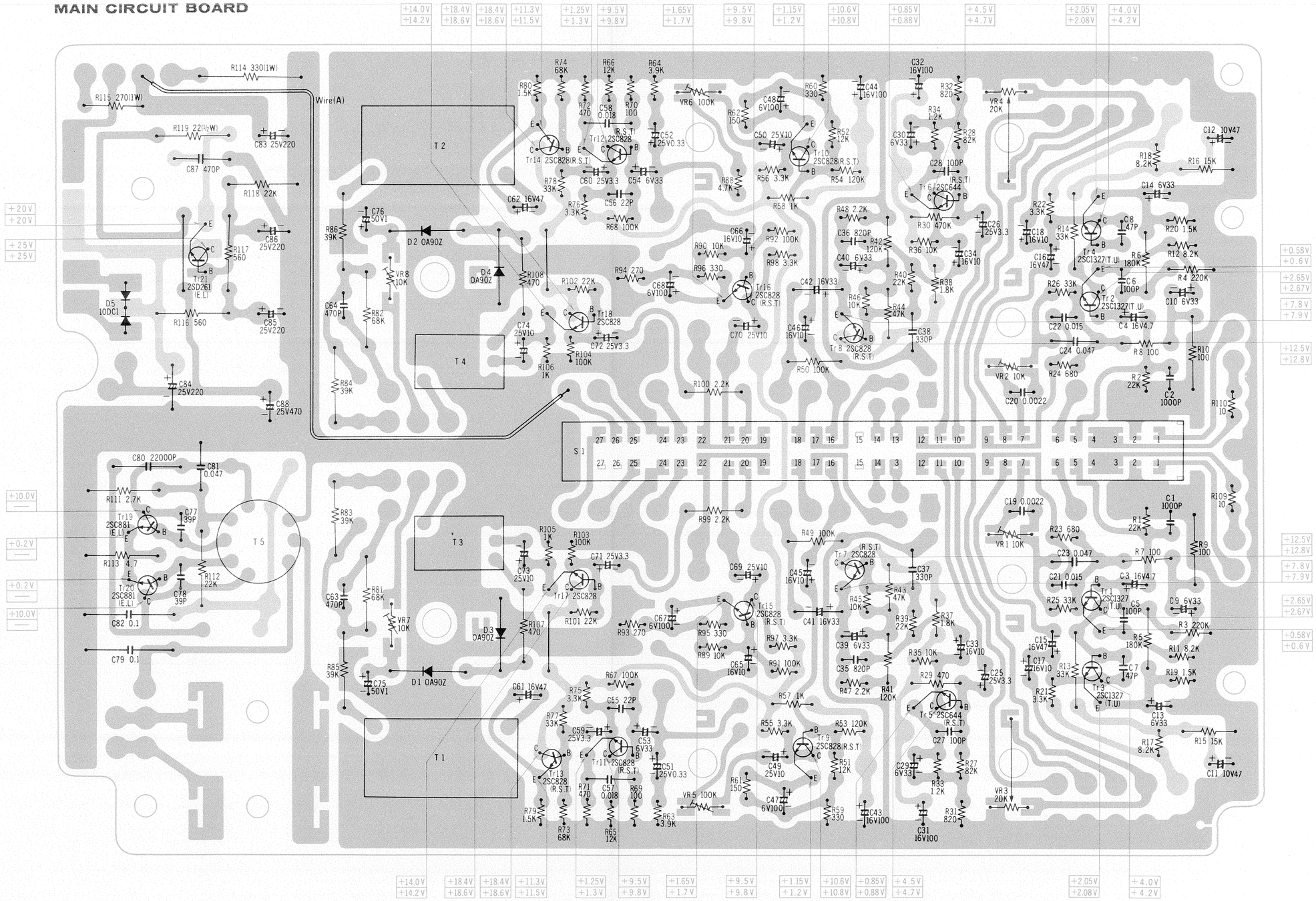
CIRCUIT BOARD

MAIN CIRCUIT BOARD

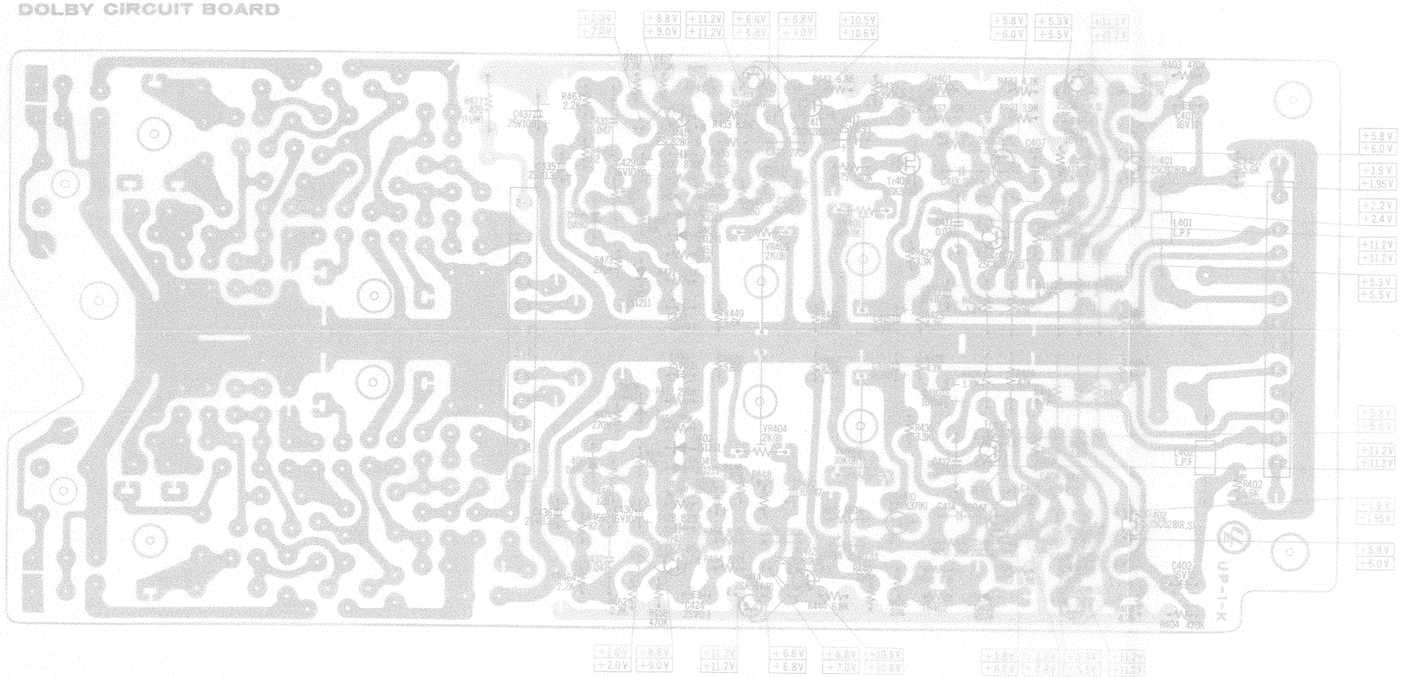


CIRCUIT BOARD

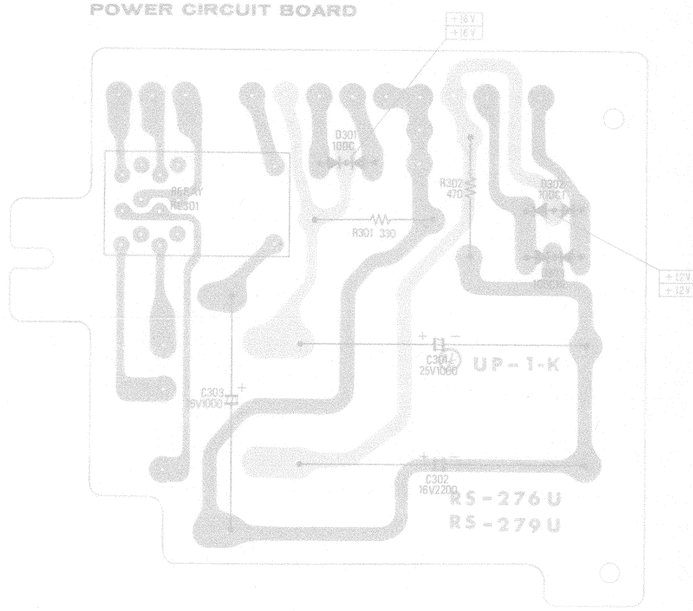
MAIN CIRCUIT BOARD



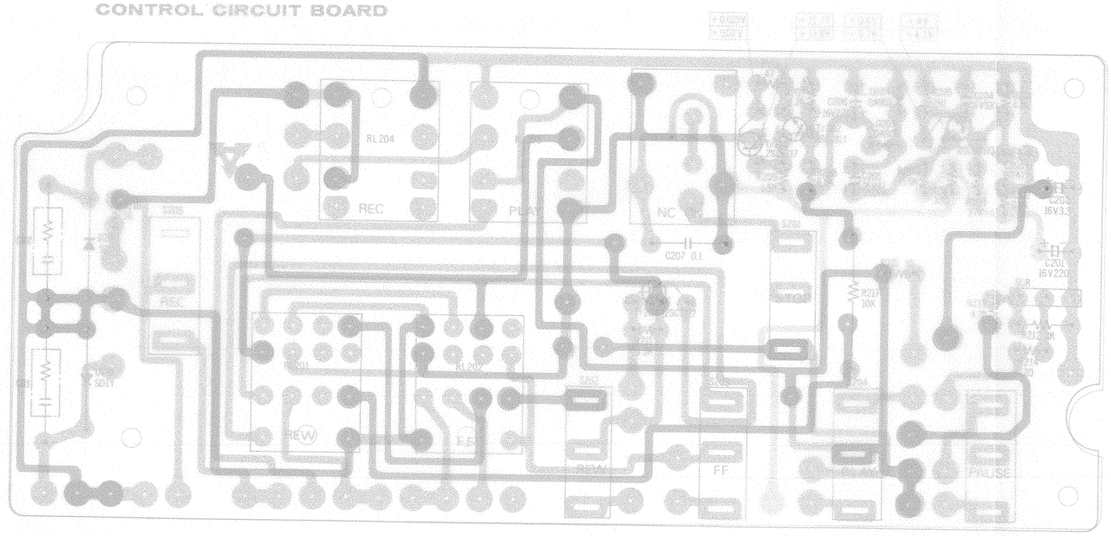
DOLBY CIRCUIT BOARD



POWER CIRCUIT BOARD



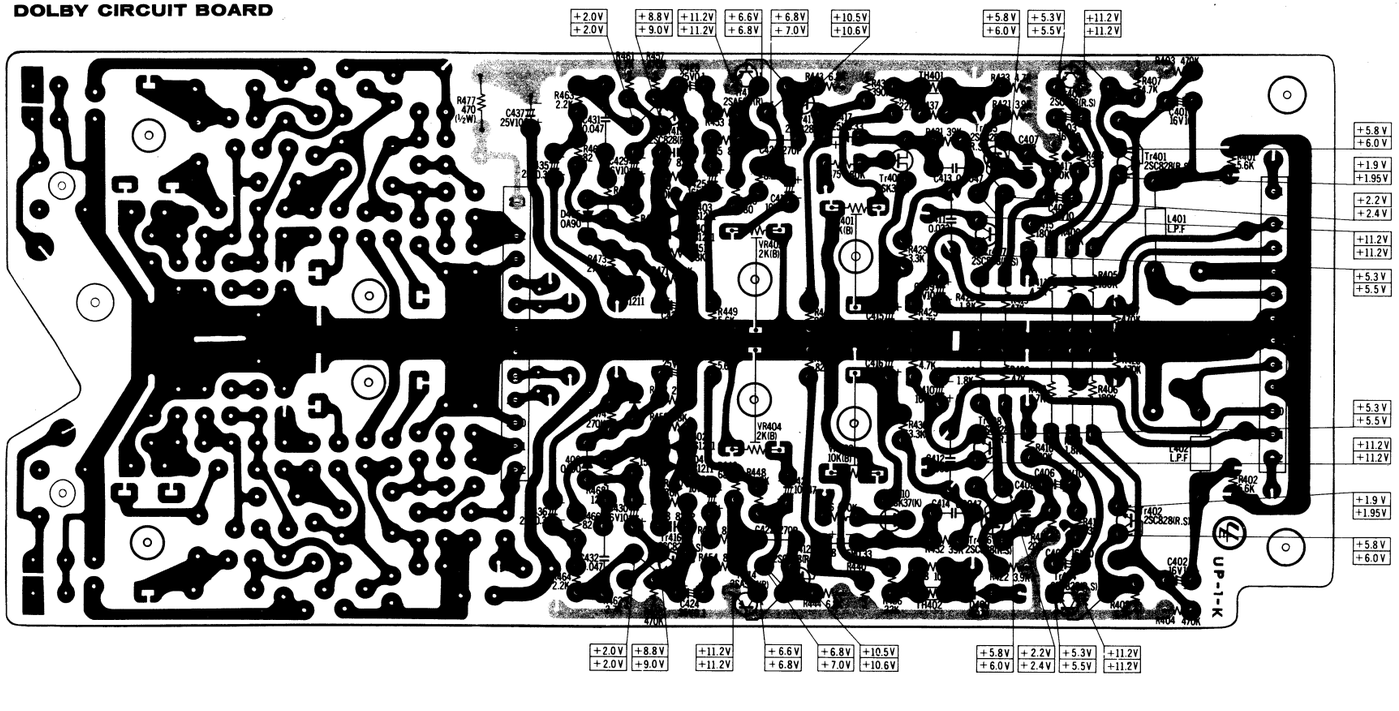
CONTROL CIRCUIT BOARD



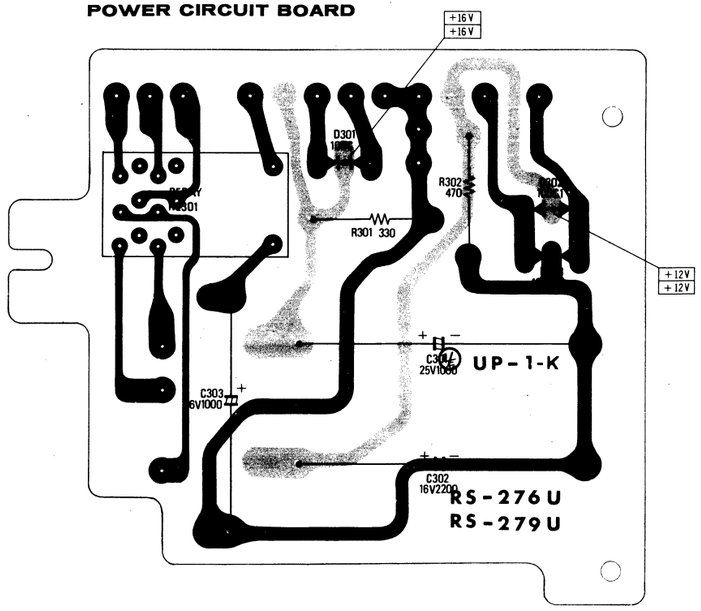
NOTE:

The circuit shown in green on the conductor is +B circuit.
Values indicated in ▭ are DC voltages between the chassis and electrical parts.
The upper values should be measured during recording and the lower values during playback.

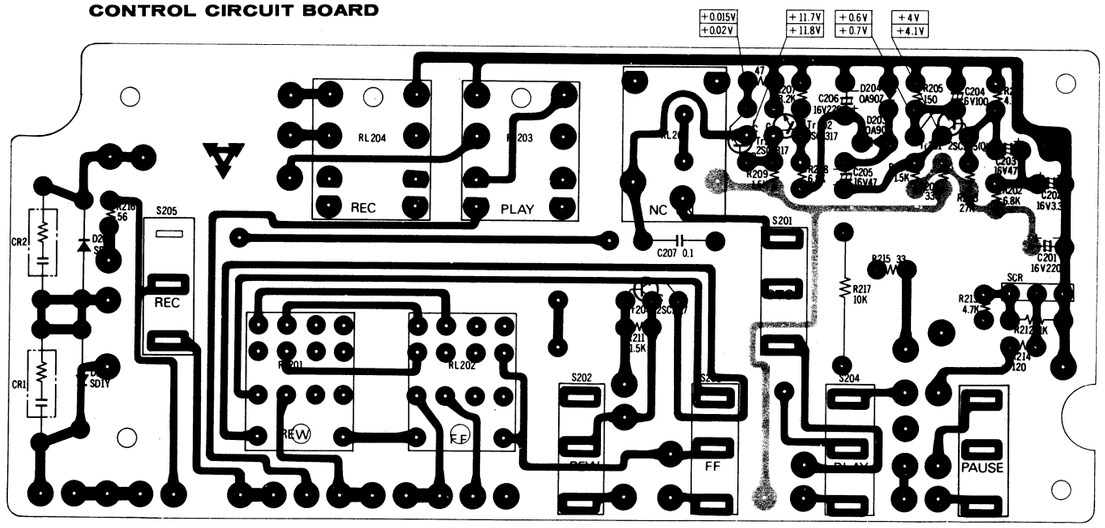
DOLBY CIRCUIT BOARD



POWER CIRCUIT BOARD



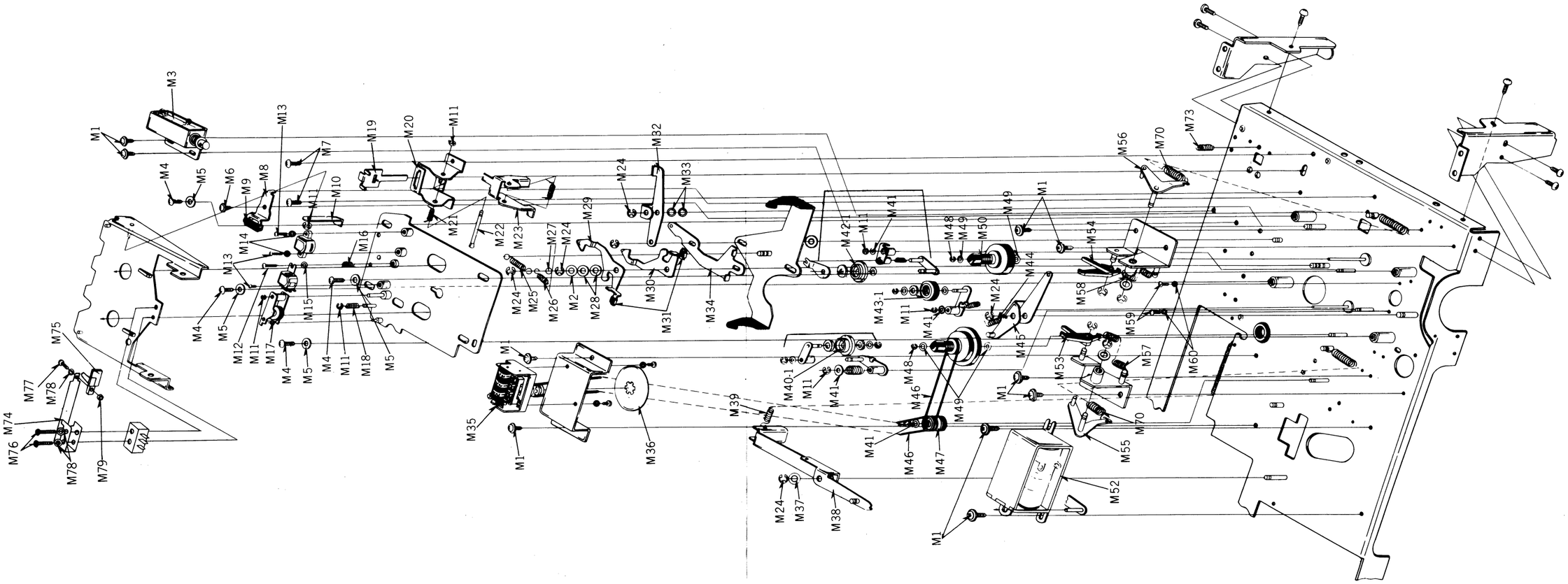
CONTROL CIRCUIT BOARD

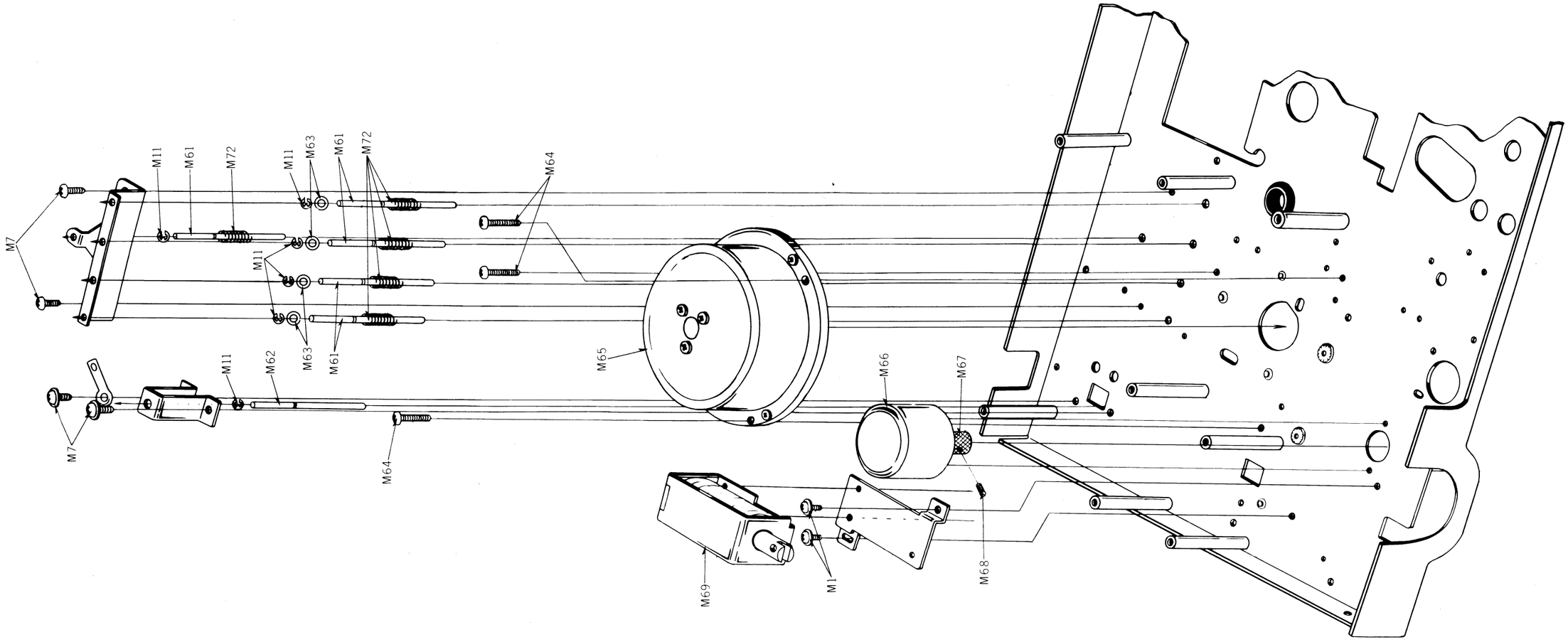


NOTE:

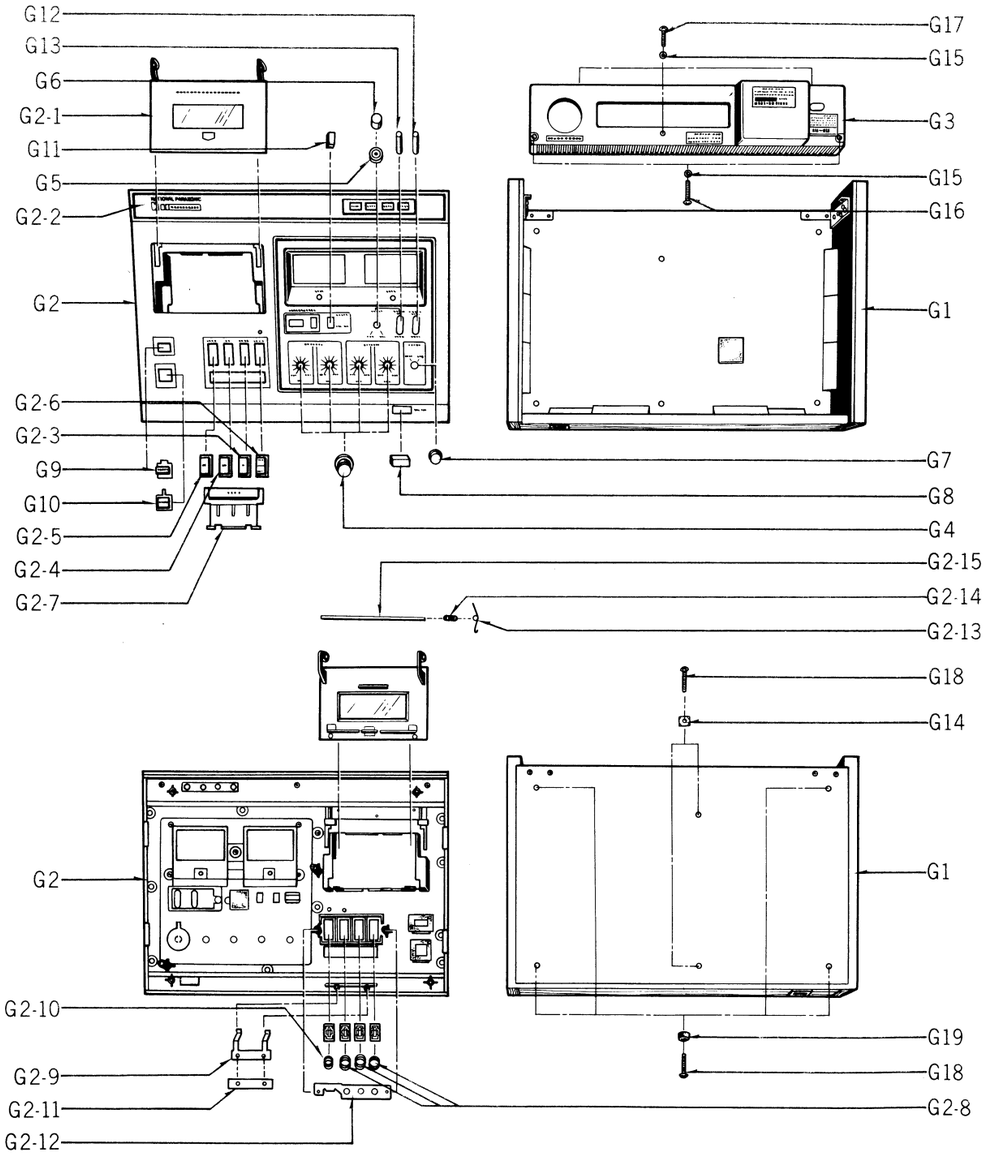
The circuit shown in green on the conductor is +B circuit.
Values indicated in ▭ are DC voltages between the chassis and electrical parts.
The upper values should be measured during recording and the lower values during playback.

EXPLODED VIEWS




M7
M11
M61
M72
M11
M63
M61
M72
M64
M11
M62
M63
M61
M65
M66
M67
M7
M64
M69
M1
M68

CABINET PARTS



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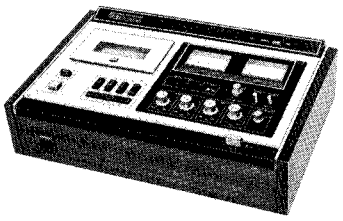
REPLACEMENT PARTS LIST

MODEL RS-276US

NATIONAL PANASONIC



RS-276US

NOTE:

1. Be sure to make your orders of Replacement Parts according to this List.
2. "×" in "Rank" Column indicates that the part are not supplyable.
3. "**A**, **B** and **C**" in "Rank" Column indicates the recommended stock of replacement parts. Refer to the recommended stock table on last page.
4. "★" in "Remarks" Column indicates New Parts.
5. "ISO" in "Remarks" Column indicates ISO Screw or Nut.

NOTA:

1. Habrá que asegurarse que los pedidos de piezas de repuesto se hagan según esta lista.
2. "×" marcado en la columna "Rank", quiere decir que dichas piezas no pueden ser provistas.
3. "**A**, **B** y **C**" marcadas en la columna "Rank" indican el surtido que se recomienda tener de dichas piezas de repuesto.
4. "★" marcado en la columna "Remarks", quiere decir que las piezas son nuevas.
5. "ISO" marcado en la columna "Remarks", quiere decir que es un tornillo o tuerca "ISO".

NOTE:

1. Bien s'assurer de se conformer à la liste suivante pour les commandes de pièces de rechange.
2. "×", dans la colonne "Rank", indique qu'il n'est pas possible de fournir ces pièces.
3. "**A**, **B** et **C**", dans la colonne "Rank", indiquent le stock recommandé de pièces de rechange. Se reporter en dernière page au tableau des stocks/recommandés.
4. "★", dans la colonne "Remarks", indique les pièces nouvelles.
5. "ISO", dans la colonne "Remarks", indique une vis ou un écrou ISO.

HINWEIS:

1. Bestellen Sie Ihre Ersatzteile genau nach dieser Liste.
2. Mit "×" in der "Rank" Spalte aufgeführte Teile können nicht geliefert werden.
3. "**A**, **B** und **C**" in der "Rank" Spalte zeigt Ihnen den Vorrat der Ersatzteile an.
4. "★" in der "Remarks" Spalte bedeutet "neue Teile".
5. "ISO" in der "Remarks" Spalte bedeutet ISO-Schraube oder Mutter.

按：

1. 關於代用零件之訂購，務請依照此表而行之爲荷。
2. 「等級」(Rank) 一欄中之 "×" 標記表示該零件無從供應。
3. 「等級」(Rank) 一欄中之 "**A**, **B**, **C**" 標記表示該零件有存貨，值得介紹。
   請參照最後一頁的「值得介紹存貨表」。
4. 「備考」(Remarks) 一欄中之 "★" 形符號標記表示該零件爲新出品。
5. 「備考」(Remarks) 一欄中之 "ISO" 符號標記表示國際標準化機構 (ISO) 式螺絲或螺母。

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
		MECHANICAL PARTS					
C	M1	Sems Screw ⊕3 x 6	XYN3+C6FXS	11			COMMON ISO
C	M2	Fiber Washer 4.2 x 9 x 0.25	QBK7007	1			"
B	M3	Solenoid	QME0131	1			RS-275US
C	M4	Screw ⊕3 x 6	XSN3+6FCS	3			COMMON ISO
C	M5	Flat Washer 3φ	XWG3FC	5			"
C	M6	Sems Screw ⊕2.6 x 6	XYN26+C6FX	1			COMMON
C	M7	Tapping Screw ⊕3 x 8	XTN3+8	6			"
C	M8	Stop Table	QMA1567	1			RS-275US
C	M9	Cushion Rubber	QBG1255	1			"
C	M10	Stopper	QML2164	1			"
C	M11	Stop Ring E 2φ	XUC2FT	14			COMMON
B	M12	Head Adjust Screw ⊖2 x 4	XSN2-4	1			"
C	M13	Screw ⊕2 x 4	XSN2+4	3			"
C	M14	Spring Washer 2φ	XWA2BFX	2			"
C	M15	Flat Washer 2φ	XWG2BN	1			"
B	M16	Head Adjust Spring	QBC1127	1			RS-275US
A	M17	Pressure Roller	QXP0198	1			RS-255S, 256US 280S
B	M18	Pressure Roller Spring	QBN1187	1			RS-275US
X	M20	Eject Angle	QMA1563	1			"
C	M21	Eject Spring	QBN1185	1			★
X	M22	Eject Shaft	QMS1793	1			RS-275US
X	M23	Eject Assembly	QXL0456	1			"
C	M24	Stop Ring E3φ	XUC3FT	5			COMMON
C	M25	Lock Plate Spring	QBT1530M	1			
C	M26	Moving Lever Spring	QBT1561	1			★
B	M27	Brake Spring	QBN1175	1			RS-275US
C	M28	Fiber Washer 4.2 x 9 x 0.5	QBK7006	2			COMMON
C	M29	Brake Arm-Left	QML2095	1			RS-275US

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
C	M30	Brake Arm-Right	QML2273	1			RS-275US
C	M31	Brake Rubber	QBG1275	2			"
C	M32	Up Lever	QML2489	1			★
C	M33	Fiber Washer 4.2 x 6 x 1	QBK7128	2			COMMON
X	M34	Brake Rod	QMR1221	1			RS-275US
A	M35	Tape Counter	QDC0039S	1			RS-275US (ISO)
C	M36	Light Disk	QMF1408	1			"
C	M37	Fiber Washer 4.2 x 9 x 0.5	QBK7017	1			COMMON
C	M38	Record Lever Assembly	QXL0625	1			★
C	M39	Record Lever Spring	QBT1532M	1			★
A	M40	Takeup Idler Assembly	QXI0049	1			RS-275US
B	M40-1	Takeup Idler	QDP1389	1			"
C	M41	Washer	QBJ3099	4			COMMON
A	M42	FF Idler Assembly	QXI0047	1			RS-275US
B	M42-1	FF Idler	QDP1360	1			"
A	M43	Connection Idler Assembly	QXI0048	1			"
B	M43-1	Connection Idler	QDP1361	1			"
C	M44	Head Plate Return Spring	QBT1418	1			"
C	M45	Play Lever Assembly	QXL0455	1			"
A	M46	Counter Belt	QDB0129	2			"
B	M47	Counter Connection Pulley	QDP1357	1			"
C	M48	Stop Ring E1.5ϕ	XUC15FT	2			COMMON
C	M49	Washer	QBJ3224	4			RQ-3001S
A	M50	Supply Reel Table Assembly	QXP0409	1			★
A	M51	Takeup Reel Table Assembly	QXP0332	1			RS-275US
B	M52	Plunger	QME0128S	1			" (ISO)
C	M53	Cassette Pressure-Right	QBJ1772	1			"
C	M54	Cassette Pressure-Left	QBJ2238	1			★
X	M55	Spring Hanger-Right	QML1926	1			RS-275US

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
X	M56	Spring Hanger-Left	QML1925	1			RS-275US
B	M57	Cassette Pressure Spring-Right	QBT1562	1			"
B	M58	Cassette Pressure Spring-Left	QBT1522	1			"
C	M59	Screw ⊕2.6 x 4	XSN26-4	2			COMMON
C	M60	Spring Washer 2.6φ	XWA26BFX	2			"
C	M61	Operation Shaft-A	QMS2191	4			RS-275US
C	M62	Operation Shaft-B	QMS2192	1			"
C	M63	Fiber Washer 3.2 x 6 x 0.5	QBK7121	4			COMMON
B	M64	Motor Holding Screw ⊕3 x 12	XSN3+12S	3			" ISO
B	M65	Capstan Motor	QDM1601	1			RS-275US
A	M66	Takeup Motor	QDM1335	1			"
A	M67	Motor Pulley	QDP1358	1			"
B	M68	Motor Pulley Screw	XXA2E4	1			COMMON
B	M69	Plunger	QME0127S	1			RS-275US ISO
C	M70	Up Spring	QBT1502T	2			"
C	M72	Push Button Spring	QBC1178	5			"
C	M73	Record Return Spring	QBC1177	1			"
C	M74	Record Safety Lever Spring	QBP1474	1			★
C	M75	Record Safety Piece	QBJ1870	1			★
C	M76	Screw ⊕2 x 10	XSN2+10	2			COMMON
C	M77	Screw ⊕2 x 6	XSN2+6	1			"
C	M78	Spring Washer	XWA2BFX	3			"
C	M79	Nut 2	XWG2EFX	1			"
		RESISTORS					
B	R1, 2, 39, 40, 101, 102, 435, 436						
		Carbon Resistor 22KΩ 1/4W	ERD14VJ223	8			
B	R3, 4	" 220KΩ 1/4W	ERD14TSJ224	2			
B	R5, 6	" 180KΩ 1/4W	ERD14TSJ184	2			
B	R7, 8, 69, 70	" 100Ω 1/4W	ERD14VJ101	4			
B	R9,10	" 100Ω 1/4W	ERD14TJ101	2			

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
B	R11, 12, 17, 18, 207, 447, 448, 453, 454, 455, 456						
		Carbon Resistor 8.2KΩ 1/4W	ERD14VJ822	11			
B	R13, 14	" 33KΩ 1/4W	ERD14TSJ333	2			
B	R15, 16 469, 470	" 15KΩ 1/4W	ERD14VJ153	4			
B	R19, 20, 79, 80 204, 209, 211	" 1.5KΩ 1/4W	ERD14VJ152	7			
B	R21, 22, 55, 56, 75, 76, 97, 98						
		" 3.3KΩ 1/4W	ERD14VJ332	8			
B	R23, 24, 445, 446	Carbon Resistor 680Ω 1/4W	ERD14VJ681	4			
B	R25, 26, 77, 78, 413, 414, 451, 452						
		" 33KΩ 1/4W	ERD14VJ333	8			
B	R27, 28	" 82KΩ 1/4W	ERD14VJ823	2			
B	R29, 30, 403, 404, 457, 458	" 470KΩ 1/4W	ERD14VJ474	6			
B	R31, 32	" 820Ω 1/4W	ERD14VJ821	2			
B	R33, 34	Carbon Resistor 1.2KΩ 1/4W	ERD14VJ122	2			
B	R35, 36, 45, 46, 89, 90, 217	" 10KΩ 1/4W	ERD14VJ103	7			
B	R37, 38	" 1.8KΩ 1/4W	ERD14VJ182	2			
B	R41, 42, 53, 54, 417, 418	" 120KΩ 1/4W	ERD14VJ124	6			
B	R43, 44, 419, 420	" 47KΩ 1/4W	ERD14VJ473	4			
B	R47, 48, 99, 100, 463, 464	Carbon Resistor 2.2KΩ 1/4W	ERD14VJ222	6			
B	R49, 50, 67, 68, 91, 92, 103, 104						
		" 100KΩ 1/4W	ERD14VJ104	8			
B	R51, 52, 65, 66	Carbon Resistor 12KΩ 1/4W	ERD14VJ123	4			
B	R57, 58, 105, 106, 212	" 1KΩ 1/4W	ERD14VJ102	5			
B	R59, 60, 95, 96, 206	" 330Ω 1/4W	ERD14VJ331	5			
B	R61, 62, 205	Corbon Resistor 150Ω 1/4W	ERD14VJ151	3			
B	R63, 64, 421, 422	" 3.9KΩ 1/4W	ERD14VJ392	4			
B	R71, 72	" 470Ω 1/4W	ERD14VJ471	2			
B	R73, 74	" 68KΩ 1/4W	ERD14VJ683	2			
B	R81, 82	" 68KΩ 1/4W	ERD14TJ683	2			
B	R83, 84, 85, 86	Carbon Resistor 39KΩ 1/4W	ERD14TJ393	4			

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
B	R87, 88, 201, 213, 407, 408, 425, 426, 433						
		Carbon Resistor 4.7KΩ 1/4W	ERD14VJ472	9			
B	R93, 94	" 270Ω 1/4W	ERD14VJ271	2			
B	R107, 108	" 470Ω 1/4W	ERD14TJ471	2			
B	R109, 110	" 10Ω 1/4W	ERD14VJ100	2			
B	R111	Carbon Resistor 2.7KΩ 1/4W	ERD14TJ272	1			
B	R112, 118	" 22KΩ 1/4W	ERD14TJ223	2			
B	R113	" 4.7Ω 1/4W	ERD14TJ4R7	1			
B	R114, 301	Solid Resistor 330Ω 1W	ERC1GM331	2			
B	R115	" 270Ω 1W	ERC1GK271	1			
B	R116, 117	Carbon Resistor 560Ω 1/4W	ERD14TJ561	2			
B	R119	Solid Resistor 22Ω 1/2W	ERC12GK220	1			
B	R202, 208, 443, 444	Carbon Resistor 6.8KΩ 1/4W	ERD14VJ682	4			
B	R203	" 27KΩ 1/4W	ERD14VJ273	1			
B	R210	" 47Ω 1/4W	ERD14VJ470	1			
B	R214, 467, 468	Carbon Resistor 120Ω 1/4W	ERD14VJ121	3			
B	R215	" 33Ω 1/4W	ERD14VJ330	1			
B	R216	" 56Ω 1/4W	ERD14VJ560	1			
B	R302	Solid Resistor 470Ω 1W	ERC1GM471	1			
B	R401, 402, 449, 450	Carbon Resistor 5.6KΩ 1/4W	ERD14VJ562	4			
B	R403, 404, 457, 458	Carbon Resistor 470KΩ 1/4W	ERD14VJ474	4			
B	R405, 406	" 180KΩ 1/4W	ERD14TJ184	2			
B	R409, 410	" 1.8KΩ 1/4W	ERD14TJ182	2			
B	R411, 412	" 4.7KΩ 1/4W	ERD14TJ472	2			
B	R415, 416, 459, 460, 475, 476	" 180KΩ 1/4W	ERD14VJ184	6			
B	R423, 424	Carbon Resistor 1.8KΩ 1/4W	ERD14VJ182	2			
B	R429, 430	" 3.3KΩ 1/4W	ERD14VJ332	2			
B	R431, 432	" 39KΩ 1/4W	ERD14VJ393	2			
B	R437, 438	" 10KΩ 1/4W	ERD14VJ103	2			
B	R439, 440	" 390KΩ 1/4W	ERD14VJ394	2			

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
B	R441, 442	Carbon Resistor 820KΩ 1/4W	ERD14VJ824	2			
B	R461, 462	" 2.7KΩ 1/4W	ERD14VJ272	2			
B	R465, 466	" 82Ω 1/4W	ERD14VJ820	2			
B	R471, 472, 473, 474	" 270KΩ 1/4W	ERD14VJ274	4			
B	R477	Solid Resistor 470Ω 1/2W	ERC12GK471	1			
B	R603, 604	Carbon Resistor 2.2KΩ 1/4W	ERD14TJ222	2			
B	R605, 606	" 5.6KΩ 1/4W	ERD14TJ562	2			
B	R609, 610	" 8.2Ω 1/4W	ERD14TJ8R2	2			
B	R611	Solid Resistor 47Ω 1/2W	ERC12GK470	1			
		VARIABLE RESISTORS					
A	VR1, 2, 7, 8	Semi-fixed Variable Resistor 10KΩ (B)	QVL01AA00B14	4			RS-275US
A	VR3, 4	" 20KΩ (B)	EVL42AA00B24	2			RQ-229S RS-272US, 275US
A	VR5, 6	" 100KΩ (B)	QVL01AA00B15	2			RS-275US
A	VR401, 402	" 10KΩ (B)	EVL42AA00B14	2			"
A	VR403, 404	" 2KΩ (B)	QVL01AA00B23	2			★
A	VR601, 602	Variable Resistor 20KΩ (A)	EVCB7AS25A24	2			★
A	VR603, 604	" 10KΩ (A)	EVCBDAS25A14	2			★
A	VR605	" 50KΩ (B)	EVKA2AR21B54	1			★
		CAPACITORS					
C	C1, 2	Styrol Capacitor 1000pF	ECQS1102JZ	2			
C	C3, 4	Ceramic Capacitor 16V 4.7μF	ECSZ16EF4R7	2			
C	C5, 6, 27, 28	" 100pF	ECCC1H101K	4			
C	C7, 8	" 47pF	ECCCIH470K	2			
B	C9, 10, 13, 14, 29, 30, 39, 40, 53, 54						
		Electrolytic Capacitor 6V 33μF	ECEA6V33L	10			
B	C11, 12, 419, 420	" 10V 47μF	ECEA10V47L	4			
B	C15, 16, 61, 62, 203, 205	" 16V 47μF	ECEA16V47L	6			
B	C17, 18, 33, 34, 45, 46, 65, 66, 401, 402, 403, 404, 405, 406, 409, 410, 415, 416, 425, 426, 429, 430						
		Electrolytic Capacitor 16V 10μF	ECEA16V10L	22			
C	C19, 20	Mylar Capacitor 0.0022μF	ECQM05222KZB	2			

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
C	C21, 22	Mylar Capacitor 0.015μF	ECQM05153KZB	2			
C	C23, 24	" 0.047μF	ECQM05473KZB	2			
B	C25, 26, 59, 60, 71, 72	Electrolytic Capacitor 25V 3.3μF	ECEA25V3R3L	6			
B	C31, 32, 43, 44	16V 100μF	ECEA16V100L	4			
C	C35, 36	Styrol Capacitor 820pF	ECQS1821JZ	2			
C	C37, 38	" 330pF	ECQS1331JZ	2			
B	C41, 42	Electrolytic Capacitor 16V 33μF	ECEA16V33	2			
B	C47, 48, 67, 68 204	" 100μF	ECEA6V100L	5			
B	C49, 50, 69, 70, 73, 74	" 25V 10μF	ECEA25V10L	6			
C	C51, 52	Aluminum Capacitor 25V 0.33μF	ECAG25ER33	2			
C	C55, 56	Ceramic Capacitor 22pF	ECCCIH220K	2			
C	C57, 58	Mylar Capacitor 0.018μF	ECQM05183KZB	2			
C	C63, 64	" 470pF	ECQS1471J	2			
B	C75, 76	Electrolytic Capacitor 50V 1μF	ECEA50V1L	2			
C	C77, 78	Ceramic Capacitor 39pF	ECC1H390K	2			
C	C79	Mylar Capacitor 8200pF	ECQF4822JZ	1			
C	C80	Mylar Capacitor 2200pF	ECQF4223JZ	1			
C	C81, 431, 432	" 0.047μF	ECQM05473KZB	3			
C	C82	" 0.1μF	ECQM05104KZB	1			
B	C83, 85, 86	Electrolytic Capacitor 25V 220μF	ECEA25V220L	3			
B	C84, 88	" 25V 470μF	ECEA25V470L	2			
C	C87	Ceramic Capacitor 470pF	ECKC1H471MF	1			
B	C201, 206	Electrolytic Capacitor 6V 220μF	ECEA16V220L	2			
B	C202	" 10V 3.3μF	ECEA16V3R3L	1			
C	C207	Mylar Capacitor 0.1μF	ECQM05104KZB	1			
C	C301	Aluminum Capacitor 16V 1000μF	ECEB16V1000L	1			
C	C302	Aluminum Capacitor 16V 2200μF	ECEB16V2200L	1			
C	C303	" 25V 1000μF	ECEB25V1000L	1			
C	C407, 408	Ceramic Capacitor 47pF	ECCC1H470K	2			

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
C	C411, 412	Mylar Capacitor 0.033μF	ECQM05333KZB	2			
C	C413, 414	" 0.0047μF	ECQM05472KZB	2			
C	C417, 418, 435, 436	Aluminum Capacitor 25V 0.33μF	ECAG25ER33K	4			
C	C421, 422	Ceramic Capacitor 270pF	ECCC2H271KA	2			
C	C423, 424, 433, 434	Aluminum Capacitor 25V 0.1μF	ECAG25ER1K	4			
C	C427, 428	Ceramic Capacitor 820pF	ECKC1H821KB9	2			
B	C437	Electrolytic Capacitor 100μF	ECEA25V100L	1			
C	C601, 602, 603	Ceramic Capacitor 100pF	ECCD1H101K	3			
C	C604	" 470pF	ECKD1H471MB9	1			
		COMBINATION PARTS					
B	CR1, 2	CR Combination	QCR0004	2			RS-715US
B	CR3	"	QCR0002	1			RS-275US, 736US
		TRANSISTORS					
A	Tr1, 2, 3, 4	Transistor	2SC1327(T.U)	4			★
A	Tr5, 6	"	2SC644 (R.S.T.)	2			COMMON
A	Tr7, 8, 9, 10, 11,	12, 13, 14, 15, 16, 401, 402, 403, 404, 405,	406, 407, 408, 411, 412, 415, 416,				
		Transistor	2SC828 (R.S.T)	22			"
A	Tr17, 18, 201	"	2SC828	3			"
A	Tr19, 20	"	2SC881 (E.L)	2			RS-275US, 736US
A	Tr21	Transistor	2SD261 (E.L)	1			RS-270US, 272US, 275US
A	Tr202, 203, 204	"	2SC1317	3			RS-275US
A	Tr409, 410	"	2SK37 (K)	2			★
A	Tr413, 414	"	2SA564	2			RS-275US, 282S 768US
		DIODES					
A	D1, 2, 3, 4, 203, 204, 405, 406	Diode	OA90Z	8			COMMON
A	D5, 301, 302	Silicon Diode	10DC1	3			RS-262US, 275US, 736US
A	D201, 202	"	SD1Y	2			RS-270US, 275US
A	D303	"	10DC1R	1			RS-262US, 275US, 736US
A	D401, 402, 403, 404, 407, 408	"	1S1211	6			RS-253S, 267S 272US, 280S

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
A	D409	Diode	RD7A	1			★
		THERMISTORS					
B	TH405, 406	Thermistor	QVM302A	2			RQ-235S RS-820S
		TRANSFORMERS					
A	T1, 2	Recording Transformer	QLA0365	2			RS-275US
A	T3, 4	Headphone Transformer	QLA0349	2			RS-270US, 275US 735US, 736US
A	T5	Oscillator Transformer	QLB0153	1			★
A	T6	Power Transformer	QLP0579S	1			RS-275US ISO
		COILS					
B	L401, 402	Filter Coil	QLH2018	2			★
		SWITCHES					
B	S1	Slide Switch (Record/playback)	QSS1154	1			★
B	S201	Micro Switch (Stop)	QSM0040A	1			RS-275US, 715US
B	S202	" (Rewind)	QSM0040A	1			"
B	S203	" (Fast Forward)	QSM0040A	1			"
B	S204	" (Play)	QSM0040A	1			"
B	S205	Micro Switch (Record)	QSM0040A	1			RS-275US, 715US
B	S601	Lever Switch (Dolby NR IN/OUT)	QST0041S	1			★ ISO
B	S602	Lever Switch (Tape Select)	QST0033SB	1			RS-275US ISO
B	S603	Rotary Switch (Input Select)	ESRE132L25BE	1			★
B	S604	Stop Switch (Muting)	QSS1105	1			RS-262US, 275US, 736US
B	S611	Micro Switch (Pause Lock)	QSM0040A	1			RS-275US, 715US
B	S612	" (Pause Release)	QSM0040A	1			"
B	S613	Push Switch (Memory Rewind)	ESB391	1			★
B	S614	Memory Switch (Built-in Memory Tape counter)		(1)			
B	S615	Power Supply Switch	QSM0037	1			RQ-222S RS-275US
B	S616	Current Save Switch	QSM0029	1			RS-241S, 275US
B	S617	Push Switch	QSW0114S	1			RS-275US ISO

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
B	S618	Micro Switch	QSW0037	1			RQ-222S RS-275US
B	S619	"	QSW0037	1			"
B	S620	Rotary Switch (AC Voltage Select)	QSR0004	1			COMMON
		ELECTRICAL PARTS					
A	E1	Record/Playback Head	WY445Z	1			RS-275US
A	E2	Erase Head	WY236Y	1			★
A	E3	VU Meter	QSL1013A	2			★
A	E4	Pilot Lamp	XAM30TW	1			COMMON
A	E5	"	XAMQ18P	2			★
A	E6	Pilot Lamp	XAMQ17P	2			★
C	E7	Pilot Lamp Cover	QBJ1879	1			RS-275US, 736US
C	E8	Jack Board Assembly	QEJ0239	1			★
B	E9	M3 Jack	QJA0115	2			COMMON
B	E10	Headphone Jack	QJA0228	1			RS-270US, 272US 275US
B	E11	12P Plug	QJP0971	2			★
B	E12	12P Socket	QJP0972	2			★
B	E13	12P Dummy Plug	QJP0958	1			RS-275US
B	E14	12P Socket	QJS0508H	1			RS-275US
C	E15	7P Terminal Board	QJT7002	2			★
A	E16	Relay	QSK0408M	2			RS-275US
A	E17	"	QSK0215A	2			"
A	E18	"	QSK0119	1			"
A	E19	"	QSK0417	1			★
B	E20	Power Cord	QFC1041	1			COMMON
B	(E20)	(Power Cord)	(QFC1033)	(1)			(RS-276USE) only
C	E21	Cord Bushing	QTD1126A	1			COMMON
A	E22	Fuse	XBAIEI0NR3	1			"
C	E23	Fuse Holder	QTF1033	1			"
A	E24	Pilot Lamp	XAMQIT	1			RS-256US, 275US

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
		CABINET PARTS					
B	G1	Wooden Case Assembly	QYJ1320S	1			★ ISO
B	G2	Panel Assembly	QYP0381S	1			★ ISO
A	G2-1	Cassette Lid Assembly	QYF0113	1			★
A	G2-2	Mount Assembly	QYM0081	1			★
A	G2-3	Play Button	QGO4051	1			RS-275US
A	G2-4	F.F Button	QGO4052	1			RS-275US
A	G2-5	Rewind Button	QGO4053	1			"
A	G2-6	Pause Button	QGO4099	1			★
A	G2-7	Stop Button	QGO4055	1			RS-275US
C	G2-8	Button Pressure Spring-A	QBN1143	3			"
C	G2-9	Button Pressure Spring-B	QBT1469	1			RS-275US
C	G2-10	Button Pressure Spring-C	QBC1201	1			★
C	G2-11	Button Pressure Spring-A	QKT1479	1			RS-275US
C	G2-12	Button Pressure Spring-C	QKT1680	1			★
C	G2-13	Cassette Lid Spring-L	QBS1058	1			RS-275US
C	G2-14	Thrust Spring	QBS1041	1			RS-275US
C	G2-15	Cassette Lid Shaft	QMS1795	1			"
C	G3	Back Board	QBJ2132	1			★
A	G4	Volume Knob-A Assembly	QYT0279S	4			★ ISO
A	G5	VolumeKnob-C Assembly	QYT0282S	1			★ ISO
A	G6	VolumeKnob-D Assembly	QYT0283S	1			★ ISO
A	G7	Volume Knob-B Assembly	QGT1166	1			★
A	G8	Push Button Assembly	QXB0088	1			★
A	G9	Eject Button	QGO4101	1			★
A	G10	Record Button	QGO1075A	1			RS-275US
A	G11	Push Button	QGO4068	1			RS-275US
A	G12	See-Saw Knob	QGT2122AS	1			★ ISO
A	G13	"	QGT2122BS	1			★ ISO

Rank	Ref. No.	Description	Part No.	Pcs/ Set	Price (Per Pce.)		Remarks
C	G14	Square Washer	QWQ1083	2			RS-275US
C	G15	Washer	QWG4FZ	5			COMMON
C	G16	Screw ⊕4 x 35	XSN4+35FZS	2			" ISO
C	G17	Screw ⊕4 x 4	XSN4+14FZS	3			" ISO
C	G18	Screw ⊕4 x 14	XSN4+14SR	6			" ISO
C	G19	Rubber Foot	QKA1044A	4			RS-275US
		ACCESSORIES					
A	A1	Dolby Level Check Tape	QFTITCAPAT	1			★
A	A2	Cassette Music Tape	QFTITCJNAQZ	1			RS-275US
A	A3	Connection Cord-G	RP8125 (QEB0060P)	2			COMMON
B	A4	AC Plug Adaptor	QJP0603S	1			" ISO
	(A4)	(AC Plug Adaptor)	(——)				(RS-276USE only)
C	A5	Accessory Bag	QFV0047	1			RS-275US, 282S, 736US
B	A6	Instruction Book	QQT0408	1			★
	(A7)	(DIN Cord)	RP8090 (QEB0038P)	(1)			(RS-276USE only)
		PACKINGS					
C	P1	Inside Carton	QPN2866	1			★
C	P2	Inner Cushion-R	QPN2786	1			★
C	P3	Inner Cushion-L	QPN2787	1			★
C	P4	Dust Cover	XZB60X50A05	1			COMMON
C	P5	Spacer	QPN2260	1			RS-275US
C	P6	Pad	QPN2871	1			★

RECOMMENDED STOCK OF REPLACEMENT PARTS

Rank of Part	Estimated Selling Q'ty of Tape Recorder Set					
	Less than 50	100	300	500	1,000	2,000
A rank Parts	2	5	15	20	40	80
B rank Parts	1	2	5	10	20	40
C rank Parts	0	1	3	5	10	20

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